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THE AGRICULTURAL • SITUATION •

MAY 1938



A Brief Summary of Economic Conditions

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A HUNDRED MILLION BUSHELS more of wheat * * *

A 2-point decline in the index of farm products prices to the lowest figure since July 1934 * * * An increase of 85 million dollars in farm income in March over February * * * A 20-percent increase in numbers of cattle on feed in the Corn Belt * * *

A continued weak demand for farm products. These were some of the headlines of agricultural developments during the past month. * * *

The new production season has opened with prospects for crops, ranges, and pastures the best in several years. Farm work well advanced, but there are no signs of any general expansion of acreage. With crop prices low compared with wages and other costs, some shifting towards less intensive cultivation is to be expected. * * *

A feature of the month was the Government victory in a tobacco inspection case which had challenged the legality of farm referenda.

Commodity Reviews

DEMAND: Continued Weakness

THE DEMAND for farm products showed continued weakness during the past month, with little in the picture to suggest a quick recovery. As changes in consumer income ordinarily lag behind changes in industrial activity, consumer income may decline further before any sustained rise is experienced.

Renewed weakness in the securities markets, increasing evidence of economic as well as political disturbance in Europe, and failure of automobile production to experience the usual spring rise, were depressing factors in the business situation during the past month.

On the favorable side were encouraging developments in the field of residential building construction, and the proposed increases in Government expenditures and loans to private industry. It will require sometime, however, for the effects of the latter program to be felt in the demand for most farm products.

FARM INCOME: Higher

There was an increase of 85 million dollars in farmers' income from sales of products and Government payments in March compared with February; but the March total was 136 millions less than in March last year.

The March increase this year was distributed among all groups of products except grains, and cotton and cottonseed. Income from fruits and vegetables was 21 million dollars more than in February; receipts from meat animals were up 11 millions; from dairy products, up 10 millions; from poultry and eggs, up 14 millions.

Income for the first quarter of 1938 totaled \$1,679,000,000 as contrasted with \$1,946,000,000 in the first quarter of 1937. All groups of commodities except dairy products yielded smaller income. The 3-month total for dairy

products was 374 million dollars, compared with 341 millions in 1937.

During the first quarter of this year, farmers received 108 million dollars of Government conservation payments, compared with 197 millions in 1937. In the first quarter of 1937, farmers received 10 millions, in addition, of Government rental and benefit payments.

In most years, income from marketings during the second quarter of the year are 5 to 10 percent less than in the first quarter. Should this occur in 1938, the cash income from farm marketings during the first 6 months would be about 3 billion dollars, as compared with 3.5 billions in the first half of 1937.

	Income from mar- ketings	From Gov- ernment payments	Total
March:			
1938.....	\$512,000,000	\$60,000,000	\$572,000,000
1937.....	596,000,000	112,000,000	708,000,000
February:			
1938.....	456,000,000	31,000,000	487,000,000
1937.....	505,000,000	52,000,000	557,000,000

CROPS: Early Season

The new production season has opened with prospects for crops, ranges, and pastures the best in several years. Grass and grain crops came through the winter with minimum damage; much of the late-sown wheat in the eastern half of the country looked promising in early April.

The open winter has enabled farmers to conserve supplies of feed and forage. Pastures and winter grains in early April were "greening up" north to New York, Minnesota, and Montana; pastures were providing much feed in the South.

Farmers were reported as starting the season with near-record reserves of feed grain and considerable roughage, but with rather low but increasing numbers of livestock and poultry.

The carry-over of feed grains on farms next July may equal the record—23 million tons—in 1933.

PRICES: Lower

Most of the major groups of farm products—grains, fruit, dairy products, meat animals, and miscellaneous products—declined in price during the past month. Prices of chickens and eggs were about unchanged. Prices

Index Numbers of Prices Received and Paid by Farmers

[1910-14=100]

Year and month	Prices received	Prices paid	Buying power of farm products ¹
1937			
April.....	130	134	97
May.....	128	134	96
June.....	124	134	94
July.....	125	133	94
August.....	123	132	93
September.....	118	130	91
October.....	112	128	88
November.....	107	127	84
December.....	104	126	83
1938			
January.....	102	126	81
February.....	97	126	77
March.....	96	125	77
April.....	94	125	75

¹ Ratio of prices received to prices paid.

² Revised.

of cotton and cottonseed and truck crops were up.

The declines carried the index of prices of all farm products combined down to 94 percent of pre-war. At this figure the index is the lowest since July 1934. During the past year the index of prices has dropped about 28 percent.

WHEAT: Big Crop

Practically 100 million bushels was added to the prospective crop of winter wheat by the April 1 crop report. The total indicated production—726 million bushels—compared with 685 million in 1937, and 546 million the 1927-36 average.

The report showed improvement in winter wheat prospects in nearly all sections of the country except the Cotton Belt. Greatest improvement since last December has been in the Great Plains States, although in most of this area, outside of Oklahoma, indicated yields per seeded acre on April 1 were only about average.

Average yields on the spring wheat acreage indicated in the March 1 prospective plantings report would add about 200 million bushels to this year's total wheat crop. And a total

Prices of Farm Products

Estimates of average prices received by producers at local farm markets based on reports to the Bureau of Agricultural Economics. Average of reports covering the United States weighted according to relative importance of district and States.

Product	5-year average, August 1909-July 1914	April average, 1910-14	April 1937	March 1938	April 1938	Parity price, March 1938
Cotton, lb.....	12.4	12.4	\$ 14.0	8.4	8.4	16.1
Corn, bu.....	64.2	63.4	119.1	51.3	52.7	83.5
Wheat, bu.....	88.4	89.3	126.6	80.3	75.0	114.9
Hay, ton.....	11.87	12.16	12.24	8.51	8.17	15.43
Potatoes, bu.....	69.7	68.8	120.8	56.6	56.0	8.88
Oats, bu.....	39.9	40.9	54.6	29.4	28.3	51.9
Soybeans, bu.....	(¹)	(¹)	166.1	89.0	84.9	-----
Peanuts, lb.....	4.8	5.0	4.5	3.5	3.5	6.2
Beef cattle, cwt.....	5.21	5.50	6.97	6.11	6.30	6.77
Hogs, cwt.....	7.22	7.59	9.04	8.35	7.77	9.39
Chickens, lb.....	11.4	11.8	15.2	15.9	16.2	14.8
Eggs, doz.....	21.5	16.6	20.1	16.2	15.9	* 20.3
Butterfat, lb.....	26.3	25.9	33.0	29.8	27.0	* 24.3
Wool, lb.....	18.3	18.0	33.2	18.9	18.3	23.8
Veal calves, cwt.....	6.75	6.76	8.05	8.17	8.00	8.78
Lambs, cwt.....	5.87	6.46	9.19	7.35	7.23	7.63
Horses, each.....	136.60	140.40	100.20	88.60	88.00	177.60

¹ Prices not available.

² Adjusted for seasonality.

³ Revised.

crop—winter and spring wheat combined—of 925 million bushels would be about 250 million in excess of the 1932-36 average domestic disappearance of 670 million bushels.

Prices of wheat in most domestic markets have been generally downward since early March. Except for some temporary strengthening, the trend of prices in world markets is expected to be downward as adjustment is made toward the new-crop basis.

COTTON: Sales Increase

Cotton in spot markets averaged slightly under 9 cents for Middling $\frac{3}{8}$ inch in late April. Volume of sales was larger than at the corresponding time last year, but few inquiries for spot cotton to apply against new business were reported. Exports also were somewhat larger than at the corresponding time last year.

For the 8 months ended March 31, domestic exports totaled 4,657,000 bales, compared with 4,389,000 in the same period of 1936-37. But in comparing exports this season with last, it must be noted that the 1937-38 domestic supply of American cotton is about one-fourth larger than last season, and prices thus far have been 15 to 35 percent lower.

The outlook with respect to world consumption and the present estimates of supplies indicates that world carry-over of American cotton may approach 13 million bales on August 1, 1938; this would be nearly 7 million bales more than on August 1, 1937; it would about equal the peak of 1932.

World carry-over of all cotton on August 1, 1938, may be close to 10 million bales more than a year earlier, and nearly 5 million more than the previous high reached in 1932. It is possible, however, that 1938-39 world production may be sufficiently below that of last season to offset the prospective marked increase in carry-over.

CATTLE: More on Feed

A 20 percent increase in numbers of cattle on feed in the Corn Belt April 1 this year compared with last has been estimated by the BAE. The increase amounts to about 200,000 head, yet the total number on feed was much smaller than on corresponding dates in most years prior to 1934.

Marketings of fed cattle apparently have been delayed, because of the large feed supplies and relatively low prices for such cattle; feeders report that not many more will be marketed from April through June this year than last. But the supply after June will be larger than in recent months, and much larger than in corresponding months of 1937.

Range and pasture prospects in the West are reported the best in 8 years. Cattle in the range States wintered in good condition and are in good flesh except for a few thin cattle in the northern Great Plains sections. Winter losses generally were light, but in early April there were a few local losses as a result of severe storms.

A much smaller movement this spring than last of cattle from the Southwest is expected. Shipments from New Mexico may be larger, but a marked reduction is indicated for Texas, and a small decrease for Arizona. All three States have fewer cattle this year. It is expected, also, that fewer Texas cattle will go to Kansas and Oklahoma pastures.

HOGS: Lower Priced

Large marketings of hogs in May and June combined with continued weak consumer demand feature near-term prospects; but for the remainder of the present hog marketing year up to October 1 next, the heavy marketings will be offset in part by the smaller storage stocks of pork and lard.

Stocks of pork on April 1—200 million pounds less than on April 1 a year ago—were the second smallest on rec-

ord for that date. Stocks of lard were 121 million pounds compared with 217 million a year earlier, and with the 1930-34 April 1 average of 105 million.

Hog prices weakened in the last half of March and in early April, despite relatively small slaughter supplies. During the first half of the 1937-38 marketing year, beginning last October, inspected slaughter was 2.3 million head less than in the first half of 1936-37.

But during the past 6 months hog prices have been high compared with corn prices. This favorable price relationship and the relatively large supplies of feed have been principal factors accountable for the heavier average weights of hogs marketed this year than last.

Exports of both pork and lard have increased materially since last summer, whereas imports of pork have been sharply reduced. The increase in lard exports in 1937-38 reflected not only the increased domestic production of lard, but also the large supplies of cottonseed oil available from the record cotton crop of 1937.

LAMBS: Increased Marketings

Increased slaughter of sheep and lambs this May and June compared with last is indicated by reports from important sheep producing areas. The early spring lamb crop is at least 15 percent larger than the small early crop of 1937.

Marketings of Texas yearling lambs will be much smaller this spring than last, but the reduction will not entirely offset the prospective increase in marketings of early spring lambs. Conditions have been favorable for the development of new crop lambs, and for finishing yearling lambs in Texas.

Prices of new crop lambs at Kansas City in early April averaged nearly \$3 less than in the corresponding period of 1937. The lower prices for spring lambs reflect the relatively large supplies of fed lambs and the continued weak consumer demand for meats.

Feed conditions in practically all of the early lamb districts of California were much above average on April 1, the season being rated as one of the best in many years; in the Southeastern States, a record or near-record percentage of the total number of ewes had lambed by April 1; market movement of early lambs from Idaho, Washington, and Oregon is expected to be much larger this year than last.

WOOL: Steady Prices

Wool prices were steady in March, after several months of weakness. Advances in prices await improvement in the wool manufacturing situation. Mill consumption of apparel wool in February was the smallest for that month in 20 years of Government record.

Imports of wool in recent months have been negligible compared with the large imports in the early months of 1937; imports will continue small, it is expected, in view of the relatively large stocks of domestic wool and small mill demand.

Exports of wool from the 5 principal Southern Hemisphere producing countries for the 1937-38 season through February were smallest for the period in 10 years. Apparent supplies in these countries on March 1 were about 27 percent larger than a year earlier.

TRUCK CROPS: Poor Yields

Possibility that disappointingly small yields will offset some of the acreage increases in early southern vegetables was indicated by reports in late April.

Yields in Florida have been reduced and the harvest season shortened; in Mississippi, bad weather ended prospects for a favorable truck crop season; in Texas (except in the lower valley) commercial crops were retarded.

Prices of a number of truck crops advanced in early April, but by mid-month were generally less than prices a year earlier. From about mid-April to midsummer and early fall the seasonal trend of prices of most vegetables

is downward; exceptions are cauliflower, spinach, and sweetpotatoes.

A 3 percent increase this year over last in acreage of 20 truck crops—of early vegetables already planted, and prospective acreages of some intermediate and late crops for fresh market shipments—is indicated. But the combined prospective acreage of 6 important canning vegetables is indicated to be 13 percent less than the planted acreage of last year.

POTATOES: Lose Price Gain

Prices of new potatoes at central markets rose sharply in late March, but lost most of the gain by mid-April as marketings increased. Sixteen hundred cars rolled to markets during the week ended April 23; the movement is expected to increase sharply from now until early June.

Meanwhile, a sharp decrease in marketings of old stock potatoes is indicated. About 72,500 cars were shipped between January 1 and April 23, leaving about 12,500 cars to be shipped during the next month or 6 weeks.

Based upon indicated plantings and condition reports as of April 1, a new potato crop slightly smaller than a year earlier is in prospect for the second section of early States.

An 18 percent decrease in acreage is indicated for the "second early" States, but the condition of the crop on April 1 was reported as "very good."

FRUITS: Good Condition

Fruit trees came through the winter with little injury. Early budding and subsequent freezing hurt trees in some areas, but the main fruit belt was not badly affected. Fruit prospects are about average for this time of year.

Apple trees in practically all important producing areas are reported to be in good condition; the April 1 condition of the peach crop in the 10 early southern peach States was 71 percent compared with 46 a year earlier and with 65 as the preceding 10-year

average; prospects for the 1938-39 citrus crops are reported as favorable.

A 14 percent increase in total acreage of strawberries for harvest this season compared with last has been reported. Acreage in the early States is about average, acreage in the second early and intermediate States is somewhat smaller than average, but acreage in the late States is the largest on record.

Much interest has centered in the current efforts by public and commercial agencies in the East to move surplus stocks of apples into consumption. Eastern apples in late April were selling for less than half the price at that time last year; Western apples were selling relatively better.

DAIRY PRODUCTS: Prices Weak

Dairy products prices have been weak this spring, affected by the record output of milk and reduced buying power of consumers. Production of principal manufactured dairy products in February was largest for that month in 5 years, but apparent consumption has been less than a year ago.

Principal support to prices has been the buying of butter and dry skim milk by the Federal Surplus Commodities Corporation. Purchases of butter from mid-February through the first week of April totaled nearly 5.4 million pounds.

Butter production increases have been most striking in the West North Central and South Central States—areas where the 1936 drought was most serious. Average pastures plus considerable supplementary feeding this summer would mean continued large production the country over.

But although prices of dairy products have declined sharply, prices are relatively high compared with the general level of prices of farm products. In mid-April the farm price of butterfat was equivalent to the price of 28.7 pounds of feed grains, compared with 16.8 pounds a year earlier.

and the 1925-29 average of 30.6 pounds.

POULTRY: Small Flocks

Farm poultry flocks averaged 74 layers on April 1; this was 5 percent less than on April 1 last year, and 10 percent less than the 1925-34 April 1 average.

But egg production per layer continued at high record; average production per flock—43 eggs—was the largest for April 1 since 1930.

The reduction in layers as compared with the 10-year average is largest—about 19 percent—in the West Central States.

Reductions elsewhere are: South Central areas, 11 percent; South Atlantic, 7 percent; East North Central and Far Western, 4 percent. A 3 percent increase is reported for the North Atlantic area.

BAE reported an average of 42 chicks of this year's hatchings, in April 1 farm flocks; this is the largest number in 12 years of Government

record. Every major area shows an increase this year over last.

Crop correspondents in February reported intentions to purchase 8 percent more baby chicks than in 1937. The actual increase will depend upon price relationships during the next 2 months.

FARM WAGES: Higher

Farm wages are slightly higher this spring than last, indexed at 115 percent of pre-war as of April 1, compared with 112 on April 1 last year.

Wages are higher despite the decline in prices of farm products, and notwithstanding that the supply of labor is relatively larger than the demand in practically all sections of the country.

Explanation for wages relatively higher than farm products prices at this time is that wage rates customarily lag about a year behind changes in such prices.

A material advance in prices above present levels is required to support current wage rates.

“As the Farmer is Enriched—”

THE NATION was torn in Civil War. There was fear as to the food supply. Prices gyrated dangerously as speculators traded on ignorance.

In a small office in Washington sat Isaac Newton, newly appointed by President Lincoln as the first Commissioner of Agriculture. The Commissioner was studying ways to get authentic information regarding the growing crops.

Members of Congress were asked to supply the names of leading farmers to whom inquiries might be directed as to the condition of the crops. The letters were sent out; within a month, Commissioner Newton was able to

report officially there would be no shortage of food.

This was the beginning of the United States Crop Reporting Service, now covering the entire country and all of its principal farm products. For 75 years—through good times and poor—farmers have reported regularly on crop and livestock conditions, supplying information as to the food supply, making impossible any destructive speculation in food.

BUT FOR other reasons, too, Commissioner Newton created the Crop Reporting Service—reasons valid today as they were 75 years ago.

“As the farmer is enriched, all other classes prosper,” wrote the Commis-

sioner upon issuing the first crop report. "No nation," he said, "has ever developed such agricultural resources as the United States, whether the amount and the variety of its products, or their relations to manufactures and commerce are considered * * *.

"Its products are not only those cereals and animals from which our breadstuffs and meats are obtained, but embrace also those textile materials that sustain, not only our own manufacturing industry, but the great cotton manufactures of the world. Hence our manufacturing industry has been created by, and is dependent on, our agriculture."

The Commissioner added: "the relations between agriculture, manufactures, and commerce, demand that

something be done to obtain and publish, at brief intervals during the crop season, reliable information of the amount and condition of these crops."

FOR ITS possible interest, a copy of the first monthly crop report—issued in May 1863—is subjoined. (The Commissioner explained that the report covered "the amount of land sown in 1863 compared with that in 1862, and the appearance of the crop . . . by adopting 10 as the representative of an average of the amount of acres sown, making each number below or above it represents *one-tenth* of a decrease or increase, so 10 also represents an average *appearance*. The figure 9 would be one-tenth below the average of appearance and 11 would be one-tenth above it.")

MAY REPORT.

CONDITION OF THE CROPS.

	WINTER WHEAT.		SPRING WHEAT.		RYE.		CORN.		OATS.		POTATOES.		SORGHUM.		COTTON.	
	Average amount of land sown compared with 1862.	Appearance of crop at this date.	Average amount of land sown compared with 1862.	Appearance of crop at this date.	Average amount of land sown compared with 1862.	Appearance of crop at this date.	Average amount of land planted compared with 1862.	Appearance of crop at this date.	Average amount of land sown compared with 1862.	Appearance of crop at this date.	Average amount of land planted compared with 1862.	Appearance of crop at this date.	Average amount of land planted compared with 1862.	Appearance of crop at this date.	Average amount of land planted compared with 1862.	Appearance of crop at this date.
Connecticut	10	10	10	10	10	10	10	11	10	10	10	10	.....	.....	.....	.....
Delaware.....	9	9	8	9	11	11	12	9	12	8	12	9	8	12	15	12
Illinois.....	12	9	12	9	9	10	11	9	10	9	11	10	16	10	79	10
Indiana.....	10	11	10	10	10	10	10	10	9	10	11	10	15	10	20	10
Iowa.....	17	10	12	11	12	10	12	11	13	11	10	10	14	11	.....	.....
Kansas.....	18	12	6	11	15	11	10	11	10	10	12	12	13	10	83	10
Kentucky.....	9	11	.....	.....	9	9	8	10	8	9	9	10	15	10	27	12
Maine.....	.....	.....	11	10	10	10	9	10	9	10	11	10	.....	.....	.....	.....
Maryland.....	10	10	.....	.....	10	10	10	8	9	5	11	10	16	10	20	10
Massachusetts.....	10	9	11	10	11	10	10	9	9	10	10	10	.....	.....	.....	.....
Michigan.....	11	10	10	10	10	10	10	10	11	10	11	10	25	10	50	10
Minnesota.....	13	11	12	11	10	10	13	10	13	10	11	10	19	10	30	10
Missouri.....	12	11	10	8	11	11	11	10	9	8	10	10	11	10	15	10
New Hampshire.....	10	8	11	10	10	10	9	10	12	10	11	10	.....	.....	.....	.....
New Jersey.....	11	11	10	10	10	10	11	10	9	10	10	10	12	10	.....	.....
New York.....	11	10	10	10	10	9	10	10	11	10	11	10	11	11	.....	.....
Ohio.....	9	8	10	10	10	9	11	10	10	9	11	10	14	10	15	10
Pennsylvania.....	10	10	8	10	9	9	11	9	10	10	11	9	23	9	60	10
Rhode Island.....	10	10	10	10	10	10	10	10	9	10	10	10	.....	.....	.....	.....
Vermont.....	21	19	10	10	10	10	10	11	9	11	9	10	.....	.....	.....	.....
Wisconsin.....	12	10	12	11	11	10	11	10	12	11	11	10	28	10	.....	.....
Nebraska Territory	15	8	11	8	8	10	8	10	10	8	10	10	9	11	.....	.....
General average ..	11	9½	10	10	10½	10	10½	9½	10.2	9½	11	10	15½	10½	37	10½

The Land Use Program in Action

THROUGH April 15, 1938, the Secretary of Agriculture had approved 95 land utilization projects proposed by the Bureau of Agricultural Economics under authority of Title III of the Bankhead-Jones Act. These projects involve the purchase of about 2,000,000 acres of land, located for the most part in the Great Plains, tragic scene of drought and dust storms of recent years.

Similarity of land problems throughout the northern Great Plains region causes the development of projects in that region to follow a more or less common pattern. Areas selected for projects are those in which dry-land farming has been over-extended, and where a confused pattern of ownership has prevented constructive management of the range. In each major project in the northern Plains, the objective is the purchase and development of enough land, consisting principally of unsuccessful dry-land farms, to insure restoration, conservation and proper management of a large range that includes from two to five times as much land as is actually purchased.

Government purchase, although it provides a necessary backbone for the change from wasteful to thrifty use of the land and for its future management, must be supplemented by the action of organized groups of local land users, both farmers and stockmen. Specifically, this local action, which in the northern Plains most often takes the form of cooperative grazing associations, makes possible application of constructive land management to a far larger area than could be acquired with available Federal funds.

A CLOSE-UP view of the program is given by the Musselshell Central Montana project in Musselshell and Petroleum Counties. Large areas of eastern Montana had become, in the past 2 decades, centers of distress. Purchase of 260,289 acres in this

Secretary Wallace outlined in these pages last November the new land-use program. He said the enabling legislation "marks an historic step in the conservation movement." He urged the cooperation of Federal, State, and local governments in working out a long-time program of land utilization.

How the program has been put into effect in the Great Plains—"tragic scene of drought and dust storms of recent years"—is revealed in the accompanying article. This is the first of a series to be published from time to time on the land-use program in action.—*Ed.*

project was begun in 1934. Development of the area now is virtually complete. Cooperative grazing associations, leasing lands purchased by the Bureau as well as State and private lands, now have a total of 1,049,453 acres under constructive management. Local sentiment insured favorable reception of the program from the start.

The purchases were chiefly of small dry-land farms, abandoned farmland with title so clouded as to prohibit leasing, and tracts needed for water development. Control of water, which in this semi-arid region is tantamount to control of the range, provides an example of the means whereby Federal purchases make effective the control exercised by the grazing associations. Tracts were selected for purchase in part with a view to developing or improving water holes, and thereby distributing stock water more generally over the range. Hand in hand with purchase of the land went its development for range use. The development program of the Bureau included construction of stock reservoirs, well-drilling, prevention of too rapid run-off, reseeding and fencing. In the two counties, 220 stock dams alone have been built.

BOTH in purchase and development there were other important objectives. Various tracts were bought which had been wheat-cropped into exhaustion. Under the development program some of these were reseeded, plowed on the contour, basin-listed, or otherwise improved. In this way, the carrying capacity of the range is being increased heavily. On other tracts native or seeded grasses are coming back, while through the development program, soil erosion by both wind and water already has been reduced to a marked degree.

In addition to physical conservation of the soil, however, the program has made possible in the project a simplification of the complicated and impracticable pattern of ownership. Dryland farm units in the area averaged 277 acres, a size which under existing conditions rendered profitable farming of any kind impossible.

In contrast with this undesirable ownership pattern is that achieved by the project in cooperation with the grazing associations. One association now controls an average of 7,719 acres for each member, another an average of 8,431 acres. Most operating units are not actually of this size, as is shown by the fact that of 144 members in 4 associations in these counties, 85 run fewer than 150 head of cattle. Nevertheless, there has been a radical shift toward units sufficiently large to yield their operators a living in the livestock business.

Additional benefits of rationalizing the pattern of ownership are beginning to be felt. Roads which were a costly burden on the two counties have been closed and some school districts have been consolidated. Extension of these changes, with administrative savings, is expected ultimately to reduce county government costs by as much as 10 percent.

THE principal instrument of management and education of the people in this work has been the cooperative grazing associations. Enactment in Montana of a law authorizing forma-

tion of these groups has made possible progress in that State far in advance of others. Four major associations organized under Montana law are operating in the Musselshell project area. The extent to which Federal purchases have enabled these associations to function is shown by this table:

Association	Federal purchases ¹ (acreage)	Total acreage controlled by association
Winnett.....	110,534	639,593
Devil's Basin.....	32,782	186,608
Kilby-Butte.....	7,433	84,308
Pole Creek.....	18,678	138,944

¹ These figures include all purchases, options, and proposed purchases.

Mr. Cliff Miller, chairman of a recent meeting in Roundup, Mont., center of the project, voiced local sentiment when he said:

"The people in Musselshell and Petroleum Counties feel especially grateful that they are within the land purchase arrangement. I have been in the livestock business for 25 years. * * * I have seen central Montana go from livestock to farming, then back to livestock raising. We have gradually seen this program coming back. But only under improved conditions due to the development program, can the ranchers survive. * * * As chairman of our local committee, I have come in contact with many people who do not reside within this purchase area. They cannot but see the advantages of this program, and desire it to be extended."

Mr. Miller's statement is illustrative of the ever-widening circles of influence set up by land use projects. Stockmen are now forming similar grazing associations to cover the distressed areas of neighboring counties. Recent establishment of two new projects in central Montana was partly due to the widespread favorable sentiment built up there by operation of the Musselshell project.

C. F. CLAYTON.

Germany Buying Less Cotton

GERMAN imports of cotton—especially of American cotton—have declined in recent years. From 1933 through 1937, net imports from all sources dropped from 1,669,000 bales to 1,129,000 bales—a reduction of 540,000 bales within 5 years. Most of the reduction was in imports of American cotton.

Reason for the decrease is to be found in the increased German production of textile raw materials—from 47,000 short tons in 1933 to 227,000 in 1937. Production of staple fiber (“vistra”) alone, in 1937, was the equivalent of more than 500,000 bales of cotton.

The German Institute for Business Research has estimated that whereas production of textile raw materials in 1932 was only about 5 percent of consumption requirements (a relationship which had been maintained practically since the World War), production in 1937 was more than 22 percent of domestic consumption.

FOR MORE than 20 years, Germany has been experimenting with the use of wood cellulose in the production of artificial textile fibers. Processes of manufacturing continuous filament rayon were developed; but it was not until the advent of its program of self-sufficiency that Germany attempted production of staple fiber on a large scale.

Within 5 years, from 1933 to 1937, the production of staple fiber was increased from less than 6,000 short tons to more than 110,000 short tons. Meanwhile, production of rayon increased from 31,600 short tons to 62,800 short tons. A further substantial increase in production of these fibers is indicated for 1938 by recent additions to plant manufacturing capacity.

German production of natural fibers such as flax, hemp, and wool also has increased during the last 5 years. Production of flax fiber for spinning was increased from about 3,400 short tons in 1933 to more than 37,000 in 1937; hemp production rose from 220 short

tons to nearly 8,300; wool production increased from 5,700 short tons to about 8,260.

The combined production of textile raw materials in Germany—1925 to date—is shown in the following table.

Year	Agriculturally produced	Industrially produced	Total
	Short tons	Short tons	Short tons
1925.....	42,500	14,000	56,500
1928.....	20,700	25,400	46,100
1933.....	9,400	37,600	47,000
1936.....	46,200	101,400	147,600
1937.....	53,900	173,100	227,000

Source: German Institute for Business Research

PRODUCTION costs of staple fiber have been reduced in recent years, and the quality and suitability of the fiber improved. Nevertheless, the cost is still high relative to cotton; an additional unfavorable factor is that the timber which has been cut for the manufacture of this product has exceeded the new growth.

Even allowing for an increase in timber supplies through the recent acquisition of Austria, Germany eventually will be confronted with the problem of importing larger quantities of timber for the production of cellulose or of importing larger quantities of textile raw materials, particularly cotton.

Substantial quantities of timber can be obtained from neighboring countries willing to accept German goods in payment and it appears likely that Germany will favor such imports in preference to imports of overseas—particularly of American—cotton.

It must be recognized, however, that under the present German system of clearing agreements, imports are limited by the amount of German goods that can be absorbed by the other parties to the agreements. Recent developments indicate that many countries now supplying Germany with cotton and timber are being surfeited with German goods used in payment thereof.

D. F. CHRISTY.

SEVEN BILLION, three hundred million dollars was approximately the amount of the farm mortgage debt on United States farms on January 1, 1937. This figure represents a decline of nearly 2 billions since 1930. Figures for 1938 are not yet available, but there was probably an additional decline in mortgage debt during the past year.

From 1930 through 1934 there was an average annual decline of 314 million dollars in the farm mortgage debt. This included a period of forced liquidation during the depression. Subsequently, the mortgage debt was reduced by lesser sums as adjustments were made to rising farm income and land values, and in the agencies holding farm mortgages. The reductions and shifts in lending agencies are shown in the accompanying table.

ON JANUARY 1, 1937 the Federal land bank and the Land Bank Commissioner held 40 percent of all outstanding farm-mortgage debt, compared with 38 percent a year earlier, 33 percent on January 1, 1935, and 13 percent on January 1, 1930. Life-insurance companies held only 13 percent of all outstanding farm mortgages on January 1, 1937, continuing the decline, shown in previous estimates, in the relative importance of these institutions as sources of farm-mortgage credit.

The joint-stock land banks, in process of liquidation, held less than 2

percent of the total mortgage debt on January 1, 1937, as compared with 7 percent of the much larger total debt in 1930. The remaining lender groups—individuals, commercial and savings banks, official agencies of States and counties, mortgage companies, and other miscellaneous lenders—held 45 percent of the total on January 1, 1937. These groups of lenders were much less important as credit sources in 1937 than in 1929 when their holdings accounted for 57 percent of all outstanding farm-mortgage debt.

CHANGES in the amount of farm-mortgage debt during 1935 and 1936 reflect largely two opposite forces: (1) liquidation of debt primarily through distress transfers; (2) increases in debt through greater activity in the volume of land transfers.

Farm foreclosures and other distress transfers of farm properties continued in substantial volume during 1935 and 1936, although the general trend of such transfers was downward. According to estimates by the Bureau of Agricultural Economics, there were 18.0 foreclosures per 1,000 farms in the year ended March 1, 1937, compared with 20.0 in 1936,

Farm Mortgage Debt

Marked changes have occurred during the last 8 years in the capital structure of agriculture.

Land values were sharply down as farm income melted away in the depression; good farms went begging; many were sold for less than the mortgage debt.

But in the last 5 years a part of this loss has been recovered; farms are "good property." And while farm values increased, farm mortgage debt has declined.

The accompanying is a report and analysis of a vital part of the structure of agriculture—the farm mortgage debt.

21.0 in 1935, and 28.0 in 1934.

Another factor contributing to the decline of mortgage indebtedness has been the repayment of mortgage debt made possible by the more favorable agricultural conditions during 1935 and 1936, such as the increases

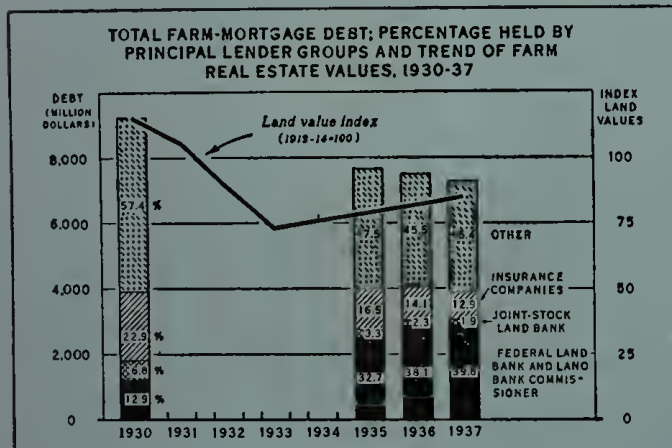
in cash income. With a much larger proportion of the farm-mortgage loans than formerly carrying provisions for annual curtailment of the outstanding principal, debt liquidation of this character becomes an important factor making for a long-time downward trend in farm-mortgage indebtedness on farms having amortized loans.

Voluntary transfers of farms increased substantially during 1935 and 1936, and additional mortgage credit was required to finance these land transfers at the rising levels of land values. A material factor contributing to the greater activity in land transfers was the increased number of farms sold by lending agencies. The Federal land banks' sales of acquired real estate increased to 13,024 in 1936 compared with 8,423 in 1935 and an average of 4,181 properties sold per year from 1930 to 1934.

A NUMBER of factors account for the greater decline in farm-mortgage indebtedness in 1936 than in 1935. For all lending groups combined, other than the Federal land banks and the Land Bank Commissioner, the percentage decline in outstanding mortgage loans was about the same for 1936 as for 1935. On the other hand, the volume of new loans closed by and the net increase in the outstanding loans of the federally sponsored credit agencies was much smaller in 1936 than in 1935.

Payment of principal installments and foreclosures on loans held by these federally sponsored agencies served to offset a large part of the new loans closed during 1936, with the result that outstanding mortgage loans for these agencies increased only by about 35 million dollars, as compared with an increase in outstanding loans of more than 352 millions during 1935.

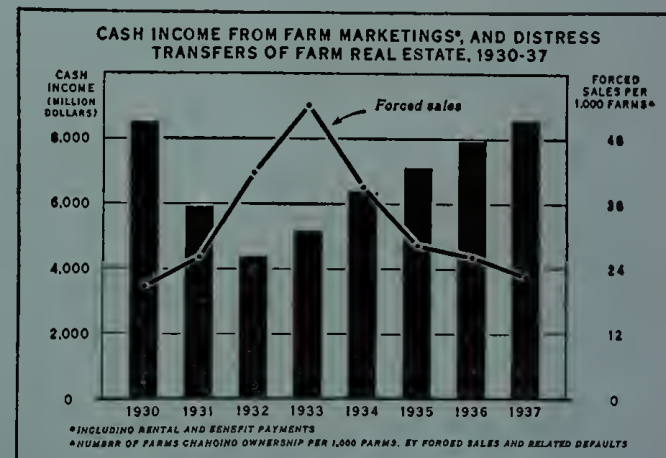
For the other lending groups the percentage decline in outstanding mortgage loans was about the same in 1936 as in 1935 despite an increase in the volume of new loans. Probably the rate of debt liquidation was accelerated in 1936 by the completion of foreclosures and other distress transfers involving mortgage farms—liquidation which had been postponed during the preceding years of economic distress, either because of debt moratorium legislation or because there had previously appeared to be some hope that



Estimated farm-mortgage debt and farm-mortgage loans of leading lending agencies, Jan. 1, 1930-37

Jan. 1	Total farm-mortgage debt	Farm loans of leading lending agencies				
		Federal land bank and Land Bank Commissioner	Life insurance companies	Open State and national banks	Three State credit agencies ¹	
	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	1,000 dollars	
1930	9,214,278	1,185,000	2,105,477		93,274	
1931		1,175,811	2,059,221	945,141	92,698	
1932		1,151,644	2,007,361		93,014	
1933		1,105,183	1,869,160		84,075	
1934		1,273,438	1,661,046	555,841	79,574	
1935	7,645,091	2,501,931	1,253,900	498,842	62,286	
1936	7,500,489	2,853,677	1,054,770	437,505	48,091	
1937	7,254,821	2,889,490	936,454	437,534	32,657	

¹ Excluding Puerto Rico.
² Rural Credit Board of South Dakota, Bank of North Dakota, and Department of Rural Credit of Minnesota.
³ June 30.



¹ INCLUDING RENTAL AND BENEFIT PAYMENTS.
² NUMBER OF FARMS CHANGING OWNERSHIP PER 1,000 FARMS, BY FORCED SALES AND RELATED DEFAULTS.

borrowers would work out of financial difficulties.

FARM-MORTGAGE credit conditions, in the aggregate, were more favorable at the beginning of 1937 than in immediately preceding years. The general rise in land values since 1933 increased the margin of safety represented by the owners' equity in mortgaged farms. The rise of farm income, coupled with downward trend of interest rates on farm-mortgage loans, tended also to give borrowers on mortgage credit a larger margin of protection against default on annual debt obligations. Considering agriculture as a whole, the liquidation of many loans for which the security was inadequate has tended to reduce the ratio of mortgage debt to the value of all mortgaged farms.

ALTHOUGH total farm-mortgage debt declined in 1935 and 1936, there were 14 States in 1935 and 9 in 1936 in which debt estimates increased.

For 12 States the percentage decrease in debt was less than 1 percent in 1935. The largest percentage reduction was in the West Central States, the decline being slightly more than 3 percent for these 11 States combined. The New England and the Mountain States showed a slight increase in debt in 1935, but in neither division was the increase as much as 1 percent.

In 1936, total farm-mortgage debt declined in all geographic divisions except the New England division, where the increase was at a greater rate than in 1935. Five States show a decline of 5 percent or more during 1936: Minnesota, 9.6 percent; North Dakota, 8.5 percent; South Dakota, 7.2; Mississippi, 5.4; and Oklahoma, 5.

In a number of States the trend of debt was quite different in 1936 than in 1935. The decline of 9.6 percent for Minnesota in 1936 is in sharp contrast with a decline of only 0.2 percent in

1935. For North Dakota the decline was 8.5 percent in 1936 as compared with an increase of 2.1 percent for 1935.

Many factors influenced the trends of debt in these 2 years, among them variations in the timing of liquidation through foreclosures, changes in the volume of farm real-estate activity from year to year, and many special circumstances affecting the economic position of farm owners.

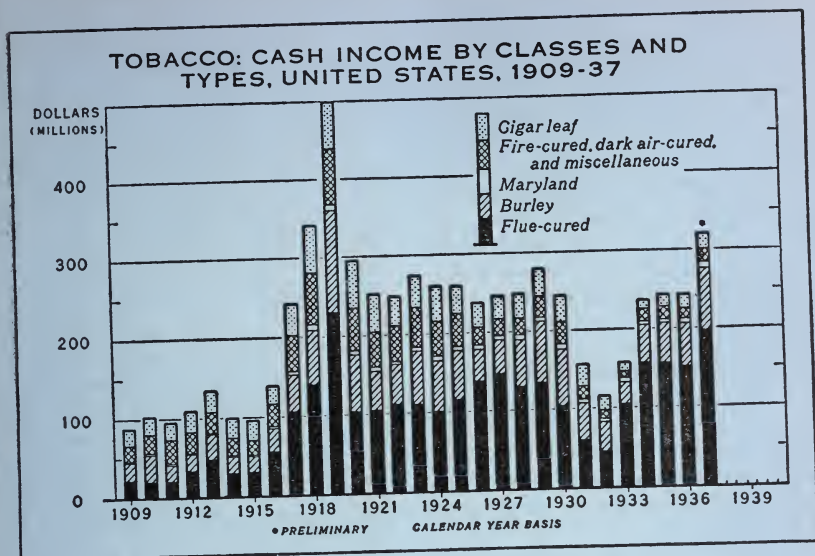
THE Federal land banks and the Land Bank Commissioner increased in relative importance as a source of mortgage credit for all geographic divisions during 1935, but in 1936 these agencies declined slightly in relative importance in the South Atlantic and East South Central States. These credit agencies were relatively most important as credit sources as of January 1, 1937 in the East South Central division, holding almost 54 percent of the farm-mortgage debt in that division. They increased in importance as credit sources in the northeastern States during 1935 and 1936, but held less than 23 percent of all outstanding farm-mortgage debt in those States at the beginning of 1937.

A decline in the relative importance of life insurance companies and joint-stock land banks as sources of farm-mortgage credit occurred in each of the 9 geographic divisions in both 1935 and 1936. The life insurance companies held only slightly more than 20 percent of all farm-mortgage debt in the West North Central States on January 1, 1937—the largest percentage held by these lenders in any geographic division.

The largest percentage of farm-mortgage debt held by the joint-stock land banks in any geographic division was 4.6 percent in the South Atlantic States.

DONALD C. HORTON.
E. J. ENGQUIST, Jr.

Tobacco Income Highest Since 1919¹



FARM INCOME from tobacco in the United States in 1937 amounted to about 319 million dollars. This was about three times the pre-war average income and the largest for any year since 1919.

(The demand for tobacco increased sharply during the war period and remained on a high level after the war, except for the depression years 1931-33. This change in level of demand was recognized in fixing the post-war years, 1919-28 as the base period for tobacco in the Agricultural Adjustment Act of 1933.)

A significant shift in the income by types of tobacco is shown by the annual estimates for the period 1909 to date. A great increase in the demand for cigarette tobacco is registered in the marked increase in the production of and income from flue-cured types of tobacco. The demand for Burley has also increased materially, while that for most other types is now below pre-war.

The estimates of income from tobacco do not include Government

rental and benefit payments to farmers in recent years. The income estimates are based upon estimated monthly marketings of tobacco multiplied by the prices farmers received during the month. In the important tobacco-producing States, sales and prices of tobacco are compiled by the State Departments of Agriculture for each type of tobacco. From these data and from data derived from reports of independent buyers of tobacco in other States, the Department has prepared calendar-year estimates of income by types of tobacco, and by States from 1909 through 1937.

THE ESTIMATED income by important types from 1909 to 1937 for the United States is given in the accompanying chart. One of the noted features during this period is the marked increase in the amount of income received from flue-cured tobacco. During the period 1910-14, less than 30 percent of the total income from tobacco was received from flue-cured types, whereas in recent

¹ This is the second of a series of income estimates by the Bureau of Agricultural Economics, for the period 1909 to date. These estimates were prepared by C. M. Purves and John A. Hicks, assisted by Miss Claudia Thomson, under the direction of the Farm Income Committee.

years the income from these types has exceeded 60 percent.

The proportion of the income received from light air-cured (Burley and Maryland) types has fluctuated widely during the period 1909 to date, but has averaged about the same in recent years as in the period 1910-14.

In contrast to the increase in income from flue-cured tobacco, there has been a marked decline in the proportion of income received from dark air-cured, fire-cured, and cigar leaf varieties since 1909. In the period 1910-14 about 25 percent of the farmers' income from tobacco was received from dark air-cured and fire-cured types, whereas during the period 1933-37 less than 6 percent of the income was received from these types. Cigar leaf types contributed about 22 percent of the total income from tobacco in the period 1910 to 1914, whereas from 1933 to date these types have about 6 percent of the contributed total income.

Estimates of cash income by classes and types, 1909-37, are summarized in the accompanying table.

Year	Flue-cured types 11-14	Light air-cured types 31-32	Dark and miscellaneous types 21-24, 35-37, and 71-72	Cigar leaf types 41-65	Total all types
	Mil-lion dollars	Mil-lion dollars	Million dollars	Mil-lion dollars	Mil-lion dollars
1909---	22	24	21	21	88
1910---	20	35	25	22	102
1911---	21	22	31	22	96
1912---	33	22	27	26	108
1913---	48	33	27	27	135
1914---	30	21	23	25	99
1915---	30	20	19	24	93
1916---	56	31	29	23	139
1917---	107	50	46	39	242
1918---	140	76	67	60	343
1919---	231	137	72	60	500
1920---	104	77	54	60	295
1921---	105	54	45	48	252
1922---	112	54	46	37	249
1923---	112	73	51	40	276
1924---	102	69	44	45	260
1925---	115	69	42	34	260
1926---	140	46	23	31	240
1927---	147	48	22	28	245
1928---	130	65	22	30	247
1929---	134	84	27	34	279
1930---	104	79	28	33	244
1931---	61	53	16	27	157
1932---	45	41	11	18	115
1933---	106	32	9	10	157
1934---	158	52	15	11	236
1935---	158	55	16	14	243
1936---	152	60	13	17	242
1937 ¹ ---	197	87	16	19	319

¹ Preliminary.

Concentration Markets for Perishables

CONCENTRATION markets for assembling fruits and vegetables are developing rapidly in producing areas, primarily because of the great increase in motortruck transportation during the last twenty years. In 1936 motortruck receipts accounted for approximately 44 percent of the fruit and vegetable supply of forty large cities.

Prior to about 1931 the use of the motortruck in bringing produce to large cities was limited chiefly to a radius of about 150 miles of the market; now produce is trucked from producing areas 400 to 500 miles and in some cases 1,000 miles, to markets.

IN 1931 about 95 percent of the supplies of fruits and vegetables coming into Philadelphia, from the nearby States of New Jersey, Pennsylvania, Delaware, and Maryland, arrived by motortruck. A similar situation existed in New York.

From 1931 to 1937 truck receipts in the markets of New York and Philadelphia from nearby areas showed practically no increase, but from Virginia, North Carolina, South Carolina, Georgia, Alabama, and Florida receipts in 1937 were the equivalent of more than 10,000 carloads—more than four times the receipts in 1931.

Last year 74 percent of the shipments of fruits and vegetables from

Virginia to Philadelphia were carried by truck—68 per cent from North Carolina, 21 from South Carolina, 11 from Georgia, 9 from Florida, and 1 percent from Alabama. Figures for New York reveal a similar picture.

The expanding radius of operation of motortrucks has opened up larger markets for producers 400 to 500 miles (and to a lesser extent greater distances) from consuming centers. This development has contributed greatly to the expansion of fruit and vegetable production in areas where climate and soil conditions are favorable and production costs are relatively low. The expansion in some of the Southern States has been especially large.

TO MAKE the necessary adaptations in the marketing system to accommodate the advent of the truck, regional assembling or concentration markets have been established in many producing areas. These are markets at which fruits and vegetables produced within a radius of 50 miles or more are assembled for sale to merchant truckmen who come from a wide area to buy supplies.

These truckers' or farmers' markets have been established by State governments, private corporations, individuals, and cooperative associations. The State of New York has established a number of so-called "regional

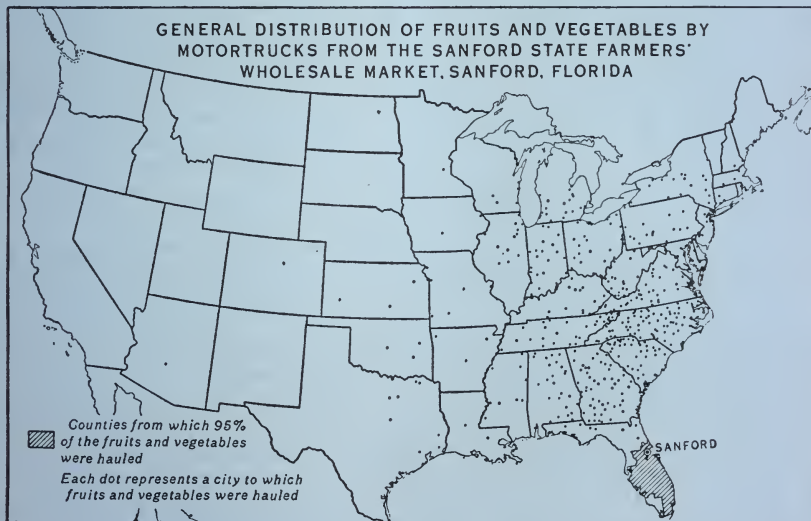
markets," New Jersey has its "country auctions," and Georgia and Florida each have a system of State-owned "wholesale farmers' markets."

While these markets vary as to type of location, layout, and method of operation, a description of one of the more successful markets in the Florida system will illustrate this type of market.

THE SANFORD State Farmers' Wholesale Market, established in 1935, consists of a shed 50 feet wide and 618 feet long, a packing house for citrus fruits, scales for weighing trucks, filling station, restaurant, telegraph office, Federal-State market news and inspection offices, and an ice house.

The market covers 20 acres of land located on a railroad siding a few blocks from the business section of Sanford. Underneath the shed is a platform 35 feet wide built at the height of truck beds. This leaves 15 feet of overhanging roof to cover the trucks as they stand at the platform. This platform is divided into stalls with a floor space 35 feet deep and 22 feet wide.

In the Sanford market most of these stalls are rented to dealers who buy from the local farmers and sell to the truckmen from all parts of the country, but any farmer may sell his own produce on the market. In some of the other Florida markets the farmers rent the stalls and sell their



own produce, and in still others the produce is sold at auction with the market manager serving as auctioneer.

The principal commodities handled on the Sanford market are beans, cabbage, celery, citrus fruits, potatoes, and tomatoes. Truckers coming to the market to buy tend to build their loads around one or more of these products, filling in with quite a variety of other commodities.

During a recent year more than 50 different kinds of fruits and vegetables were handled on this market. Since most of the truck buyers prefer mixed loads it is necessary for the market to have available at all times as complete an assortment of salable merchandise as it is possible to assemble.

ABOUT 95 percent of the supplies received on the Sanford market comes from 25 Florida counties, but a large proportion comes from within 50 miles of the market. Within about a 30-mile radius farmers usually bring in their own produce while dealers on the market usually send out trucks to bring in supplies from outside this 30-mile radius.

The annual volume of business transacted on the market is the equivalent of about 1,200 carloads. Truckers who come from other States prefer to bring loads on their way to the market, often disposing of them before reaching Sanford, but from 50 to 75 carloads of out-of-State commodities are brought to the Sanford market annually. The main commodities brought in are apples, hay, corn, potatoes, onions, and bananas, mostly noncompeting products.

During a recent season produce sold on the Sanford market was distributed (almost entirely by truck) to 26 States and Canadian Provinces. It is estimated that 95 percent of the sales go

outside the State of Florida. The accompanying map shows in a rough way the general area of distribution. From this it is evident that the bulk of sales go into Georgia, the Carolinas, and Virginia, but that loads frequently go as far as Philadelphia, Detroit, and Chicago. By far the greater part of the merchandise distributed by these truck buyers goes to produce merchants or retail stores in the smaller cities and towns rather than into the large city terminal markets.

THE SANFORD market is illustrative of the many concentration markets rapidly being developed in producing areas primarily to adapt conditions to the use of the motor-truck. To guide the development of such markets it is important that some study be made to assist in deciding for a region how many such markets there should be, where they should be located, what equipment is needed, how the market should be arranged and operated, and in answering other questions of a similar nature. The satisfactory development of markets of this type as concentration points in producing areas will adapt that part of the marketing system to the truck.

While these concentration markets are developing in producing areas, comparable changes are not being made to take care of the truck in the wholesale markets of large cities.

This, possibly, is a part of the reason why trucks from producing regions so often avoid the large city markets and go direct to the smaller cities and towns.

The motortruck is apparently here to stay; the marketing system must be changed to accommodate the truck not only at the producing end but also in the large consuming centers.

WILLIAM C. CROW.

A decrease of 32 percent in the number of farmer bankruptcies during the fiscal year ended June 30, 1937, compared with the preceding fiscal year was reported recently by the BAE, analyzing figures compiled by the Attorney General. The number of farmer bankruptcies totaled 2,479 during the period, compared with 3,642 in 1936. Increases were reported for New England, Mountain, and Pacific geographic divisions, but decreases in other regions. The decrease in the East North Central States was especially marked, from 1,045 farmer bankruptcies in 1936 to 574 in 1937.

New Tools For Agriculture

MANY NEW types of agricultural machines, and improvements of old types, have been developed in recent years. They include the so-called "baby combine," a mechanical sugar beet harvester, the use of pneumatic tires on tractors and field machinery of many kinds, machines especially adapted for use on the small or family-size farm, and improvements in materials and designs of implements.

The production of small grain is probably more completely mechanized than that of any other crop. Grain harvesting machinery such as the "baby combine," a recent improvement, is being used successfully on a variety of crops other than small grain—on soybeans, peas, alfalfa, and clovers.

More complete mechanization of sugar beet production appears near as favorable results have been obtained with a mechanical harvester which lifts and tops the beets at one operation. Improvements in sugar beet planters, now under way, for more accurate hill spacing, should reduce hand labor in thinning and cultivating, and reduce the seed bill.

BUT THE production of cotton has not been mechanized extensively, because a mechanical cotton picker is not yet commercially available. And in corn production, further improvements are necessary in the design of picker huskers before this type of machine comes into general farm use. Possibly less than 10 percent of the corn crop grown for grain is harvested by mechanical pickers, although such machines have been on the market at least 30 years. Hand husking in the field continues to be the most common method of harvesting corn.

Potatoes usually are planted, cultivated, sprayed and dug with mechanical equipment, but the "picking up" is as yet a hand operation. Much hand work is of course required for

fruits and vegetables, but mechanical sorting, packing and refrigeration bring these crops to market in better condition.

The number of items of equipment used in haying is about the same as 40 years ago except for the addition of the windrow, pick-up baler. Side delivery rakes are in more common use and haying machinery in general is made of higher grade materials. Mowers, for example, are provided with anti-friction bearings and gears running in oil.

More attention has also been given to safety features on modern machines, especially in connection with ensilage cutters and power take-off attachments for tractors. Pneumatic tires are regular equipment for some of the newer types of machines such as the baby combine and are available for practically all field machinery.

THE GAS tractor, probably, has affected American agriculture as much as, if not more than, the development of the reaper and steel plow of a century ago. The gas tractor has been on the market for nearly 40 years, but only during the past 10 or 12 years a unit suitable for planting and cultivating row crops, for plowing, disking, and belt work, has been available.

This type of tractor, as well as other wheel types, is frequently equipped with low pressure pneumatic tires. Of all general purpose tractors manufactured in 1937 nearly 50 percent were on rubber. Pneumatic tires not only permit higher speed in field operations but make possible road hauling with trailers.

In the early stages of development, tractors were used only for draw-bar and belt work and were generally operated from 150 to 200 hours per year. With the introduction of the power take-off, and the power lift on the general-purpose type, the usefulness of tractors has been greatly increased. An annual use of from 500

to 750 hours is not uncommon for the general-purpose type; rubber tires doubtless will bring about another increase.

THE TRACTOR, like the horse, is of little use unless harnessed to a machine for doing work. Adapting field machinery to use with tractors constitutes the major recent development in what is generally known as farm implements. A new plow, for instance, may look about the same as its predecessor but on examination it will be found to be made of better material, to have greater beam clearance for turning under trash, the shape of the moldboard of some is such as to permit of higher speed, and attachments are available for increasing effectiveness in turning under cover crops.

A self-aligning disk jointer, recently developed but not yet in general use, reduces draft from 10 to 15 percent as compared with the conventional jointer and coulter. Trash guides, also developed, are helpful in turning under insect-infested crop residue; they put fields in better condition for following operations.

Commercial fertilizer distribution is being combined with the planting operation in some instances. Work of the Bureau of Agricultural Engineering in cooperation with commercial, State, and other Government agencies has resulted in the development of equipment for placing fertilizer in the soil at a place with reference to the seed, seed piece, or seedling where the fertilizer will be utilized most effectively by the growing crops.

A variable depth cotton planter, now increasing in use, has been effective in reducing replanting operations. The seed are placed at varying depths for optimum soil moisture conditions regardless of ensuing weather conditions.

THERE IS a trend toward the production of machinery suitable for the small or family size farm. In the early stages of mechanization the combine and the tractor, for instance, were too expensive and cumbersome for small farms. During more recent years these as well as other items of field machinery have been developed in sizes and designs suitable for the average or less-than-average size farm.

MUCH improvement in farm machines has been of a kind not apparent to casual observation—quality changes such as better wearing metal, simplification of design, convenience, capacity for higher speeds, and wider applications.

A few years ago a committee of the American Society of Agricultural Engineers worked out quality-efficiency ratings for many farm machines which showed approximate improvement over the same types in use 20 years earlier. With 100 as a base for the machines of about 1914, some of them were rated as follows: silage filler, 215; manure spreader, 180; tractor plow, 190; corn picker, 210; mower, 170; hay loader, 155; disk harrow, 190; grain thresher, 195; cream separator, 145; power corn sheller, 190; grain drill, 140; and grain binder, 170.

— W. M. HURST,
Bureau of Agricultural Engineering.

Government Wins Tobacco Case

A DECISION of importance to the future of Government tobacco inspection was handed down April 5 by the United States Circuit Court of Appeals sitting at Richmond, Va. The case was an appeal from a decree enjoining the officials of the Department of Agriculture from enforcing

the provisions of the Tobacco Inspection Act of August 23, 1935.

The appellees, complainants in the lower court, were warehousemen operating tobacco auction warehouses at Oxford, N. C. The injunction granted on their application had brought a cessation of tobacco inspection.

tion on their floors (service on other floors not involved in the bill of complaint was continued).

The service involved in this litigation consisted of free but mandatory inspection of tobacco in basket lots as delivered by growers, the inspections being made before the auctioning process. Supplementary to the inspection service, daily and weekly price reports were issued. These showed the current average price hundredweight on each grade.

The object of the combined service was to acquaint the grower with the grade of each basket of his tobacco and the current market price as a matter of information by which he might protect himself against unfair prices.

THE BILL of complaint filed in the lower court attacked the constitutionality of the Inspection Act on three grounds:

(1) *That the Act is not a valid regulation of interstate commerce.*—The contention here was that the tobacco is not in interstate commerce until it leaves the growers' hands, i. e., has entered possession of the buyers. On this basis the complainants alleged that the act was an invasion of the powers reserved to the States. In reply the court noted that the act does not require the grading of the tobacco, but merely forbids it being offered for sale at auction on designated markets without such inspection and grading, and is thus a regulation of the auction sale of tobacco on markets where it is purchased in interstate commerce.

In support of the interstate character of the trade the court noted the large percentage of purchases made for shipment out of North Carolina. Numerous decisions of the Supreme Court were cited, notably *Shafer v. Farmers' Grain Co.*, 268 U. S. 189, *Lemke v. Farmers' Grain Co.*, 258 U. S. 50, *Dahnke-Walker Milling Co. v. Bondurant*, 257 U. S. 282, and *Stafford v. Wallace*, 258 U. S. 495.

(2) *That the Act is void as an unconstitutional delegation of legislative power to the Secretary of Agriculture and to the growers of tobacco.*—This contention had reference to the provision of the act that the Secretary may designate for mandatory inspection service auction markets where the tobacco sold thereon, or the products thereof, moves in interstate commerce, when a referendum is held among the growers patronizing such market and two-thirds of the growers voting favor such designation.

The court held that there was no delegation of power to anyone; that what is delegated to the Secretary is the designation of markets which are to have the service, to which the court could see no more objection than delegation of power to the Administrator of Public Works to designate projects for loans and grants under the Public Works Program. The court held that there was no delegation of anything to the growers by the referendum; that it merely imposed a limitation on the discretion of the Secretary.

(3) *That the Act violates the due process clause of the Fifth Amendment to the Constitution.*—This contention was directed primarily at the fact that whereas Oxford, N. C., was designated under the act, many other markets were not, so that regulations imposed on the complainants and on the Oxford market were discriminatory, caused a loss of business, etc. The court agreed that arbitrary discrimination would violate the due process clause but found that there was no discrimination in this case, since the service could not be inaugurated on all markets simultaneously.

THE DECISION, on 14 closely typed pages, is a clear-cut victory for the Government on all issues raised. It seems improbable that the act will again be challenged in court.

CHAS. E. GAGE.

New Uses For Cotton

A COTTON utilization research program was begun by the Bureau of Agricultural Economics in 1927. This program has had two closely related objectives, one of developing new and improved products to increase the consumption of American cotton, the other of securing information on the present and prospective uses of cotton. The Bureau, in cooperation with other agencies, particularly North Carolina State College, has developed new or improved cotton bagging, cotton binding material for bituminous-surfaced roads, consumer packages for fruits and vegetables, cotton fabric for curing concrete, cotton bags for packaging raw sugar, and other materials of less importance.

In addition, more than a score of studies and investigations of the use of cotton for various purposes have been made. These have included surveys of the use of cotton on farms, in the wholesale grocery business, in bags for cement, flour, and other commodities, and in tire fabrics, to mention only a few. These studies serve as a guide for developmental work and, in addition, yield basic information relating to the present and potential uses for cotton.

No million-bale-a-year uses have resulted from these activities but new uses have been developed and a foundation has been laid for an expansion of work in this field by both public and private agencies. Such an expansion seems justified from the point of view of ultimate consumers and cotton manufacturers, as well as cotton farmers. To the general public, the constant development of new and improved products better suited for its needs is, of necessity, reflected in a higher standard of living. And in view of the fact that most of the uses for cotton that have been developed have been textile materials, the advantage to cotton manufacturers also seems apparent.

THE 1937-38 world supply of American cotton is more than 24.5 million bales. Domestic consumption for the first half of the 1937-38 season was about 20 percent less than in the corresponding period in the previous season when there was a record total consumption of nearly 8 million bales.

Exports and foreign consumption of American cotton this season have been running a little ahead of a year ago but in recent years have been materially reduced by the increased supplies of foreign growths, the rapid expansion in the use of rayon abroad, and the various factors adversely affecting world trade.

Rayon production is also increasing in the United States and, at the same time, improved products such as paper have become increasingly competitive with cotton in uses such as bags, towels, and twine. Moreover, jute and various other natural fibers, already long-standing competitors of cotton, are continually offering threats to the consumption of cotton in uses such as wrapping and packaging materials.

These considerations make it apparent that if the place of cotton in the textile-fiber field is to be maintained, the development of new and improved cotton products is essential.

THE development of additional uses for cotton is a slow process. The requirements of prospective uses must be examined with regard not only to the physical suitability of cotton but also as to whether the price of the finished product is low enough to compete effectively with other materials.

More laboratory work must be done and additional facilities are needed for technical analyses and development work. But laboratory work alone is not enough. Commercial introduction of the new product is necessary and must be successfully carried out before the objective of utilizing ad-

ditional cotton can be fully realized.

In formulating a research program to secure additional utilization of American cotton, the following are primary considerations: (1) Some central agency should be established as a clearing house for ideas and for coordinating activities; (2) cooperation in this type of work with individual industrial concerns and trade

organizations should be continued and strengthened; (3) the work should have the services of able scientific and technological workers thoroughly trained in all the various specialized fields; (4) recognition must be given to the needs of consumers, as well as to the interests of cotton producers and manufacturers.

R. J. CHEATHAM.

Measures of Domestic Demand Reduced

NATIONAL income declined in March despite the third consecutive month of stability in industrial production. First signs that the intensified recovery efforts of the Government may meet with success are to be found in the high rate of application for loans for residential building and from small business. No improvement in industrial production has yet made an appearance. Consumer income has probably continued its decline.

Due to relatively low retail prices of food, the per capita income of non-agricultural workers is sufficient to buy about as much food now as a year earlier but in terms of other items of the family budget there has been a decline in purchasing power of about 11 percent. This is, of course, much smaller than the decline in industrial production. Early revival in industrial activity is imperative if the decline in consumer purchasing power is to be held to moderate proportions.

Measures of Domestic Demand

[1924-29=100]

	March				Percent change		
	1929	1933	1937	1938	1937-38	1933-38	1929-38
National income.....	105.6	56.7	94.9	86.1	-9	+52	-18
Nonagricultural income:							
Total.....	105.9	59.4	95.3	87.9	-8	+48	-17
Per capita.....	101.2	55.0	85.0	77.8	-8	+41	-23
Factory pay rolls:							
Total.....	106.3	36.1	96.2	69.8	-27	+93	-34
Per employed wage earner.....	101.9	58.7	95.2	85.4	-10	+45	-16
Industrial production:							
Total.....	110.5	55.2	110.5	74.0	-33	+34	-33
Factories processing farm products.....	105.8	82.7	115.3	87.4	-24	+6	-17
Other factory production.....	115.3	39.1	105.8	63.0	-40	+61	-45
Construction activity:							
Contracts awarded, total.....	100.0	11.6	46.3	39.7	-14	+242	-60
Contracts awarded, residential.....	90.4	7.2	40.3	32.2	-20	+347	-64
Employment in production of building materials.....	95.5	32.1	65.5	51.3	-22	+60	-46
Cost of living:							
Food.....	97.7	57.6	82.3	75.7	-8	+31	-23
"All other items".....	98.3	81.1	83.8	86.0	+3	+6	-13
Purchasing power of nonagricultural income:							
per capita:							
For food.....	103.6	95.5	103.3	102.8	(1)	+8	-1
For "All other items".....	103.0	67.8	101.4	90.5	-11	+33	-12

¹ Denotes change of less than one-half of 1 percent.

NOTE.—All indexes adjusted for seasonal variation except "Cost of living."

General Trend of Prices and Wages

[1910-14=100]

Year and month	Whole-sale prices of all commodities ¹	Industrial wages ²	Prices paid by farmers for commodities used in ³			Farm wages	Taxes ⁴
			Living	Production	Living and production		
1920.....	225	222	222	174	201	239	209
1921.....	142	203	161	141	152	150	223
1922.....	141	197	156	139	149	146	224
1923.....	147	214	160	141	152	166	228
1924.....	143	218	159	143	152	166	228
1925.....	151	223	164	147	157	168	232
1926.....	146	229	162	146	155	171	232
1927.....	139	231	159	145	153	170	238
1928.....	141	232	160	148	155	169	239
1929.....	139	236	158	147	153	170	241
1930.....	126	226	148	140	145	152	238
1931.....	107	207	126	122	124	116	217
1932.....	95	178	108	107	107	86	188
1933.....	96	171	109	108	109	80	161
1934.....	109	182	122	125	123	90	153
1935.....	117	191	124	126	125	98	155
1936.....	118	199	122	126	124	107	166
1937.....	126	215	128	135	130	120	---
1937—March.....	128	218	127	139	132	---	---
April.....	128	219	---	---	134	112	---
May.....	128	219	---	---	134	---	---
June.....	127	220	129	141	134	---	---
July.....	128	218	---	---	133	123	---
August.....	128	220	---	---	132	---	---
September.....	128	215	129	132	130	---	---
October.....	125	214	---	---	128	126	---
November.....	122	205	---	---	127	---	---
December.....	119	207	126	127	126	---	---
1938—January.....	118	201	---	---	126	111	---
February.....	116	204	---	---	126	---	---
March.....	116	205	123	128	125	---	---

Year and month	Index numbers of farm prices [August 1909-July 1914=100]							Ratio of prices received to prices paid
	Grains	Cotton and cottonseed	Fruits	Truck crops	Meat animals	Dairy products	Chick-ens and eggs	
1920.....	232	248	191	---	174	198	223	211
1921.....	112	101	157	---	109	156	162	125
1922.....	106	156	174	---	114	143	141	132
1923.....	113	216	137	---	107	159	146	142
1924.....	129	212	125	150	110	149	149	143
1925.....	157	177	172	153	140	153	163	156
1926.....	131	122	138	143	147	152	159	145
1927.....	128	128	144	121	140	155	144	139
1928.....	130	152	176	159	151	158	153	149
1929.....	120	144	141	149	156	157	162	146
1930.....	100	102	162	140	133	137	129	126
1931.....	63	63	98	117	92	108	100	87
1932.....	44	47	82	102	63	83	82	65
1933.....	62	64	74	105	60	82	75	70
1934.....	93	99	100	103	68	95	89	90
1935.....	103	101	91	127	118	108	117	108
1936.....	108	100	100	113	121	119	115	114
1937.....	126	95	122	122	132	124	111	121
1937—April.....	154	117	142	127	130	120	104	130
May.....	149	112	152	139	133	116	96	128
June.....	139	107	157	124	137	113	95	124
July.....	139	106	145	96	144	116	102	125
August.....	119	90	123	104	151	119	109	123
September.....	111	74	121	117	144	123	119	118
October.....	93	67	99	130	136	128	127	112
November.....	85	65	88	124	120	132	135	107
December.....	86	64	76	112	111	136	127	104
1938—January.....	91	66	70	101	110	128	113	102
February.....	89	68	68	121	110	121	94	97
March.....	85	70	69	107	117	117	93	96
April.....	82	71	68	117	114	110	93	94

¹ Bureau of Labor Statistics Index with 1926=100, divided by its 1910-14 average of 68.5.

² Average weekly earnings, New York State factories. June 1914=100.

³ These indexes are based on retail prices paid by farmers for commodities used in living and production reported quarterly for March, June, September, and December. The indexes for other months are interpolations between the successive quarterly indexes.

⁴ Index of farm real estate taxes, per acre, 1913=100.

⁵ Preliminary.